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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,996	12/05/2003	Robert I. Clayton	27735.20	9112

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901 MAIN STREET, SUITE 3100
DALLAS, TX 75202

EXAMINER

STEPHENSON, DANIEL P

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,996

Applicant(s)

CLAYTON, ROBERT I.

Examiner

Daniel P. Stephenson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 14 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/6/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5-7, 10, 16, 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bodine '459. Bodine '459 discloses an apparatus for imparting mechanical vibration on a down-hole drilling system. It has a body having ports configured to pass fluid through the body. There are first and second couplers configured to couple the body to the down-hole drilling system. There is a rotating member (18) located at least partially in the body and rotatable about an axis of rotation in response to flow of the fluid. Rotation of the rotating member generates mechanical vibration imparted on the down-hole drilling system. The center of gravity of the rotating member is offset from the axis of rotation. This is due to the offset spline/mass (22). The rotating member includes a finned member (14) at least partially contained in the body and rotatable about the axis of rotation in response to the fluid flow. The fluid flowing through the drill string imparts an external energy. The shaft and rotors (27) represent a converter located at least partially within the body and configured to convert the external energy into vibration energy. A vibrating member (40) imparts the vibration energy to the down-hole drilling member. The vibrating member vibrates in response to the vibration energy in a plurality of random directions due to the unique movement of the rotors (27).

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3. Claims 1, 3, 4, 7-9, 13, 15, 17, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bodine '619. Bodine '619 (Figures 9 and 10) discloses a plurality of apparatus for imparting mechanical vibration on a down-hole drilling system. One has a body having ports configured to pass fluid through the body. There are first and second couplers configured to couple the body to the down-hole drilling system. There is a rotating member (22) located at least partially in the body and rotatable about an axis of rotation in response to flow of the fluid. Rotation of the rotating member generates mechanical vibration imparted on the down-hole drilling system. The rotating member (22) has an outer-spiraled geometry. The body (27) has an inner-spiraled geometry. The fluid flowing through the drill string in a first embodiment (Fig. 9) imparts an external energy. In a second embodiment the external energy is supplied through an electric motor (Fig. 10). The shaft and rotors (22) represent a converter located at least partially within the body and configured to convert the external energy into vibration energy. A vibrating member (11 and 27) imparts the vibration energy to the down-hole drilling member. In the second embodiment the down-hole drilling member (52) is configured to rotate about an axis of rotation. The vibrating member vibrates in response to the vibration energy in a first direction substantially parallel with the axis of rotation and a second direction substantially orthogonal to the axis of rotation. In the first embodiment, the interior surface of the body has a lobed geometry having a number of lobes that is equal to the number of lobes on the exterior of the vibrating member. The vibrating member is integral to the body.

4. Claims 1, 7, 8, 15, 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by the pre-grant publication '378 to Zheng et al. Zheng et al. '378 (Figures 7 and 8) discloses an apparatus for imparting mechanical vibration on a down-hole drilling system. It has a body

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having ports configured to pass fluid through the body. There are first and second couplers configured to couple the body to the down-hole drilling system. There is a rotating member (610) located at least partially in the body and rotatable about an axis of rotation in response to flow of the fluid. Rotation of the rotating member generates mechanical vibration imparted on the down-hole drilling system. The fluid flowing through the drill string imparts an external energy. The shaft (602) represents a converter located at least partially within the body and configured to convert the external energy into vibration energy. A vibrating member (606,608) imparts the vibration energy to the down-hole drilling member. The vibrating member is integral to the body. The vibrating member vibrates in response to the vibration energy in a direction substantially orthogonal with the axis of rotation.

5. Claims 7 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Schoeffler. Schoeffler discloses an energy accelerator for imparting energy to a down-hole drilling member. It has a body (22) configured to receive an external energy. A converter (50) is located at least partially within the body and configured to convert the external energy into vibration energy. There is a vibrating member (36) configured to impart the vibration energy to the down-hole drilling member. The vibrating member is integral with the converter.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zheng et al. '378. Zheng et al '378 shows all the limitations of the present invention, except it does not disclose that the vibrating member vibrates at a frequency from .5 HZ to 50 Hz or a amplitude from 1 G to about 15 G. Although it does state that the frequency spectrum should be adjusted according to tubing length and downhole conditions (paragraph 56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a frequency of .5 to 15 Hz or an amplitude of 1-15 G since it has been held that where the general condition of a claim is disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

8. Claims 14 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bodine '915, Gillis et al. '609, Zabcik, Richey, Bodine '742, Wicks, II et al., Marx, Brown. and Beresford et al. all show similar features to those of the present invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel P. Stephenson whose telephone number is (571) 272-7035. The examiner can normally be reached on 8:30 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Bagnell
Supervisory Patent Examiner
Art Unit 3672

DPS 